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ACID TOLERANT LEGUMES FOR THE SOUTH

A radio interview conducted by Morse Salisbury with Eugene Hollowell, Bureau of Plant Industry, and broadcast Tuesday, December 22, in the Department of Agriculture period, National Farm and Home Hour, by a network of 46 associate NBC stations.

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SALISBURY:

Yesterday in his talk with us about the plant exploration work of the Department of Agriculture, Mr. Ryerson mentioned as one of the needs of our agriculture, acid-tolerant legumes for the South. Today, Dr. E. A. Hollowell of the forage plants office in the Bureau of Plant Industry, is going to tell us some more about those acid-tolerant legumes for the South. As spokesman for the Office, Dr. Hollowell will give us the facts on these plants discovered and collected by the whole Office. Dr. Hollowell, I expect we had better start with an explanation of what acid-tolerant legumes are, and why the South wants them especially.

HOLLOWELL:

I'll be glad to, Mr. Salisbury, and Farm and Home folks. Acid tolerant legumes will grow on sour, worn land without application of lime. Of course lime might help some of them. But they will grow without it. Alfalfa, red, and sweet clover won't grow on the same land. So these legumes we are talking about today offer the only chance of taking many thousands of acres of worn, unprofitable land in the South out of crop production, seeding them to legumes, and feeding livestock and at the same time building up the land.

SALISBURY:

Well, will the acid tolerant legumes fit every condition of sour worn soils that you might find in the South?

HOLLOWELL:

Not any one of them. But there are so many that you can find some one kind to fit nearly any soil, situation, and purpose.

SALISBURY:

Let's have, Dr. Hollowell, a list of these acid-tolerant legumes.

HOLLOWELL:

Well, first, there are the summer legumes. These include the soybean, probably the greatest of them all. Then there is lespedeza, a close second, and better than soybeans for pasture. Then there are cowpeas, velvet beans, crotalaria, beggarweed, and kudzu.

SALISBURY:

And there are different varieties of each of these crops, of course?



HOLLOWELL:

Of course. And the matter of the variety to use is most important in the case of soybeans. Some varieties are best for hay, and some for grain. Some are of less value for oil production, while others are excellent for this purpose, but not so good for hay.

SALISBURY:

Can you give us the leading varieties for each purpose?

HOLLOWELL:

I can, but I think it wouldn't be the most economical thing to do. You see, the leading variety for each purpose varies with local soil and climatic conditions. Even a soybean expert has a hard time keeping all of the list of adaptations in his head. I believe our listeners would rather get the farmers' bulletin on culture and varieties of soybeans than listen to me string out a long list of variety names. There's plenty of time to study the Bulletin before soybean planting season.

SALISBURY:

What are the number and title of that bulletin?

HOLLOWELL:

Farmers' Bulletin 1520-F, "Soybeans: Culture and Varieties."

SALISBURY:

I expect a good many of the Farm and Home folks in the Southland are interested in what you can say about Lespedeza, Dr. Hollowell. You did tell us it ranked just about first among the acid tolerant legumes as a pasture plant. Is it good for anything but pasture?

HOLLOWELL:

Yes, lespedeza will make good hay -- under the right conditions. If you grow lespedeza on the better soils where moisture is available it will make hay almost equal to alfalfa. But on poor upland it usually doesn't grow tall enough for hay.

Then, too, when used only as a pasture, lespedeza has a surprisingly good effect on the soil. We have observed its use year after year in rotation with small grain, and we have seen increases in the small grain yields, especially in the first few years the rotation was practiced. We have known corn to return double the yield after a crop of lespedeza had been turned under, as compared with the yield from the same land before the lespedeza was introduced.

SALISBURY:

Now are there varieties of lespedeza?

HOLLOWELL:

Yes, there are four, the common lespedeza and three improved varieties.



The improved varieties are Tennessee 76, Kobe, and Korean. Each of the four varieties has its special good qualities and I may say its special weakness.

SALISBURY:

Well, which is the best variety for pasture?

HOLLOWELL:

We think that common is still the best bet for use in a pasture mixture which includes grasses.

SALISBURY:

Does this mean that Kobe and Korean are not so good for pasture as common?

HOLLOWELL:

By no means. But they should be used in a different way. If you use them properly they will furnish many times more grazing than common. No plant will, in fact, furnish as much mid-summer grazing on the poor sour soils of the South as the improved varieties of lespedeza.

SALISBURY:

How do you use the Korean and the Kobe lespedezas to get this good grazing?

HOLLOWELL:

Well, the improved lespedezas do best in pure culture and in rotation with a winter grain.

SALISBURY:

What varieties do best in this system?

HOLLOWELL:

Kobe or Korean. Tennessee 76 produces seed late so that you may have to use spring grains, and this is not so satisfactory as winter grain. Korean has the advantage that its seed are sure to be ripe before time to plant the grain. Kobe has the advantage of giving later grazing than Korean.

SALISBURY:

Well, Dr. Hollowell, if we're going to talk about any of the other acid-tolerant legumes we'll have to leave lespedeza. Can you send the Farm and Home folks in the South who want to study it, a publication on lespedeza?

HOLLOWELL:

Yes indeed, Farmers' Bulletin No. 1143-F, "Lespedeza As a Forage Crop."



SALISBURY:

Dr. Hollowell, what is this crotalaria?

HOLLOWELL:

Crotalaria is a comparatively new legume to the South. It has proved better adapted to the poor sandy lands than any other legume commonly grown. It is a summer annual, and entirely immune to nematodes.

SALISBURY:

But how can you use crotalaria?

HOLLOWELL:

Up to now, southern growers have used crotalaria exclusively as a cover and green manure crop; largely in connection with tree crops of citrus, pecan and tung oil.

SALISBURY:

Why not pasture or hay?

HOLLOWELL:

Well, the varieties of crotalaria used for cover and green manure crops don't appeal to the appetites of livestock.

SALISBURY:

Is there an adequate seed supply of crotalaria?

HOLLOWELL:

Yes, there is; an adequate supply of the two species grown commercially.

SALISBURY:

You mentioned kudzu. How do southern farmers use it?

HOLLOWELL:

Kudzu is a minor crop but useful on some soils and under some conditions. It has suffered from its friends, and because of the expense attached to buying and setting out the roots. Many people think of kudzu as a crop which, once established, would furnish a world of hay or grazing for an indefinite number of years. This is not correct. Kudzu will live for years if not overcut or grazed. But either overcutting or overgrazing will thin out the stand. It may be two or three years getting into production shape again.

SALISBURY:

Well, Dr. Hollowell, I know a lot of southern Farm and Home folks would like to know how to establish a kudzu field and whether or not you'd have to cul-



tivate it; and if it can be grown from seed. However, we haven't time to get your answers to all these questions. Can you send a publication that can give them?

HOLLOWELL:

Yes, An unnumbered circular on kudzu will be sent on request.

SALISBURY:

And we'd also like to know about the winter legumes for acid soils.

HOLLOWELL:

Yes, I should like to tell the story of some of them. But I expect that story is more familiar to a good many people in the audience than it is to me. In the extreme South the most progressive farmers all recognize the value of these legumes for use in increasing yields of cotton and corn. I would like to say, however, that the winter legumes most commonly used, Austrian winter peas and the vetches, also make good hay and afford excellent pasture.

SALISBURY:

Do you grow them alone for these purposes?

HOLLOWELL:

If you want, or you can grow them in mixture with oats or rye. You know, winter and early spring pasture is an almost universal need in the South, and these crops make it possible.

SALISBURY:

Thanks, ever so much, Dr. Hollowell. I expect people in Dixie would like to ask you questions for another hour or so. But I know, Farm and Home folks, that Dr. Hollowell and the other men in the forage crops office will be glad to write answers to your questions, or to send you copies of those various publications that Dr. Hollowell has mentioned. Do you have your paper and pencils ready? All right, here is the list:

On lespedeza: Farmers' Bulletin 1143-F, "Lespedeza as a Forage Crop."

On velvet beans: Farmers' Bulletin 1276-F, "The Velvet Bean."

On cowpeas: Farmers' Bulletin 1148-F, "Cowpeas: Culture and Varieties."

On soybeans: Farmers' Bulletin 1520-F, "Soybeans: Culture and Varieties."

On crotalaria: Circular 137-C, "Crotalaria, a New Legume for the South."

On kudzu:

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